

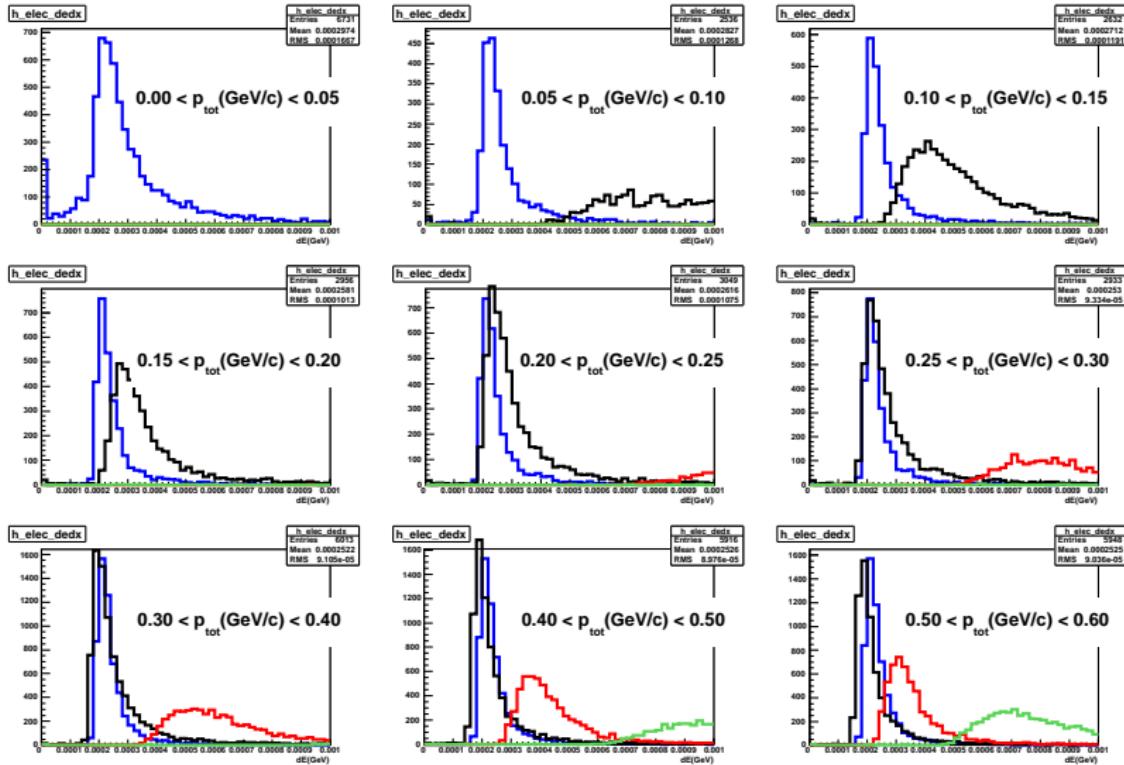
# dE/dx particle identification with svx

## SVX software meeting

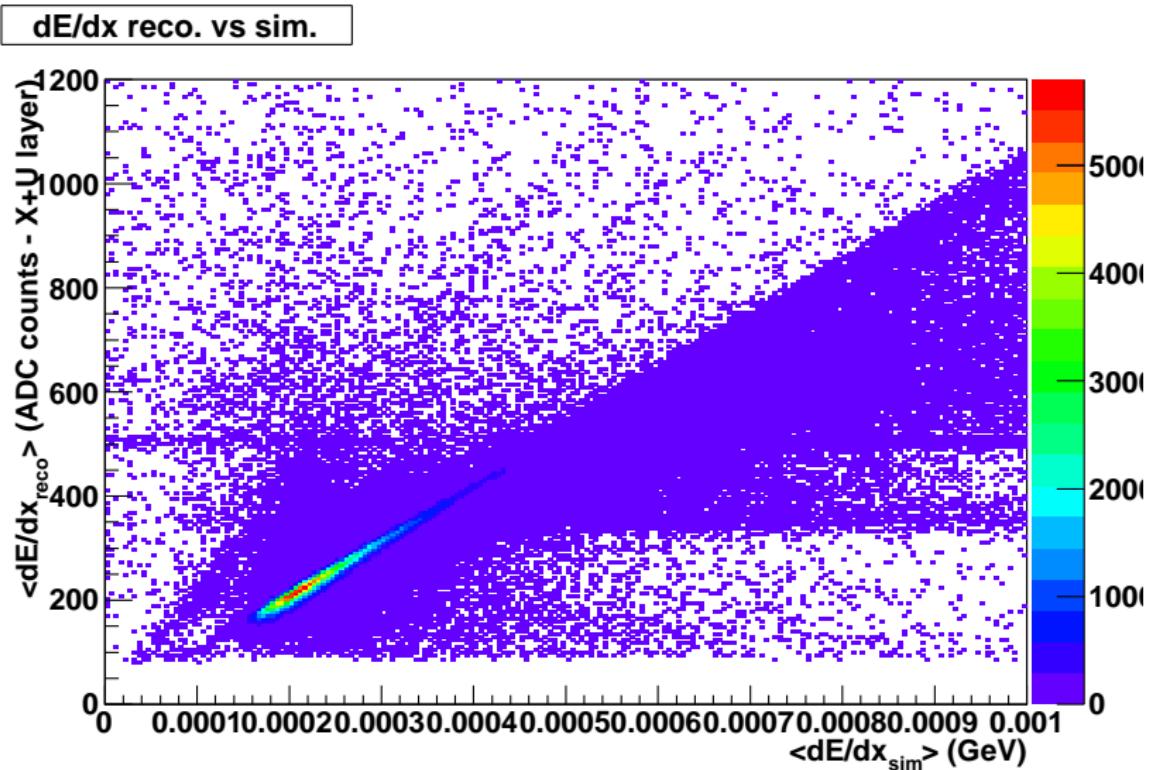
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September 1, 2009

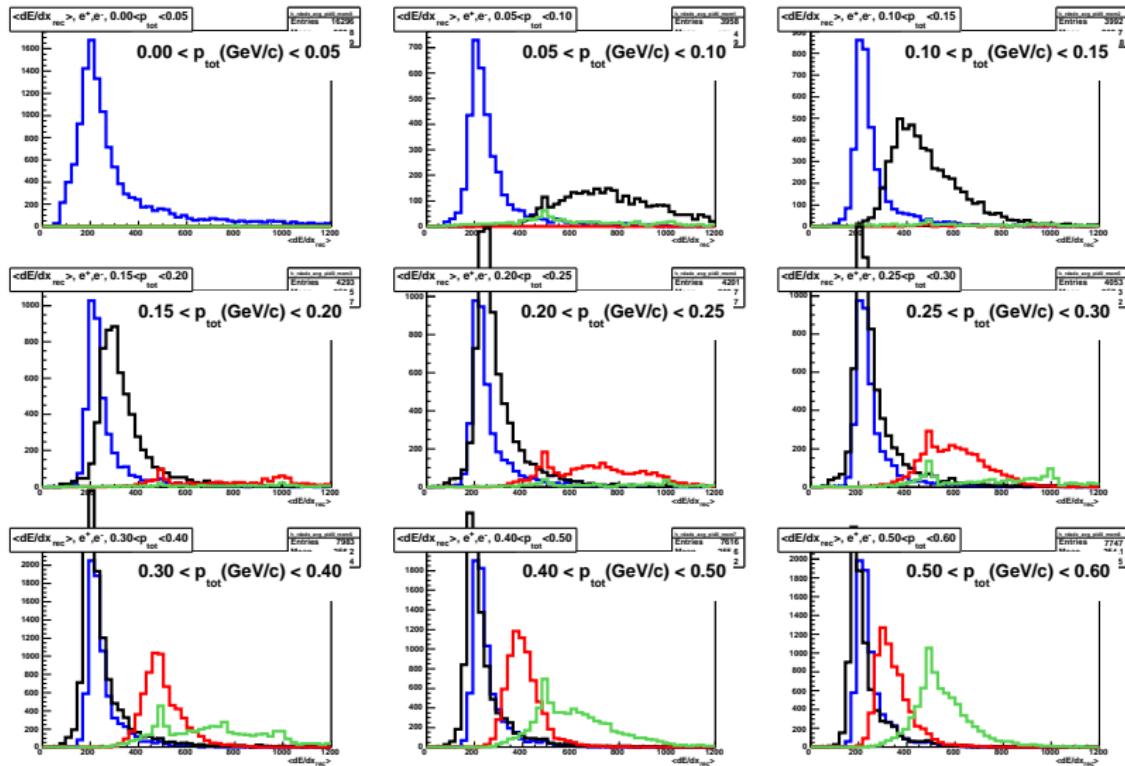
# Last week... Simulated (GEANT) dE/dx, uncorrected



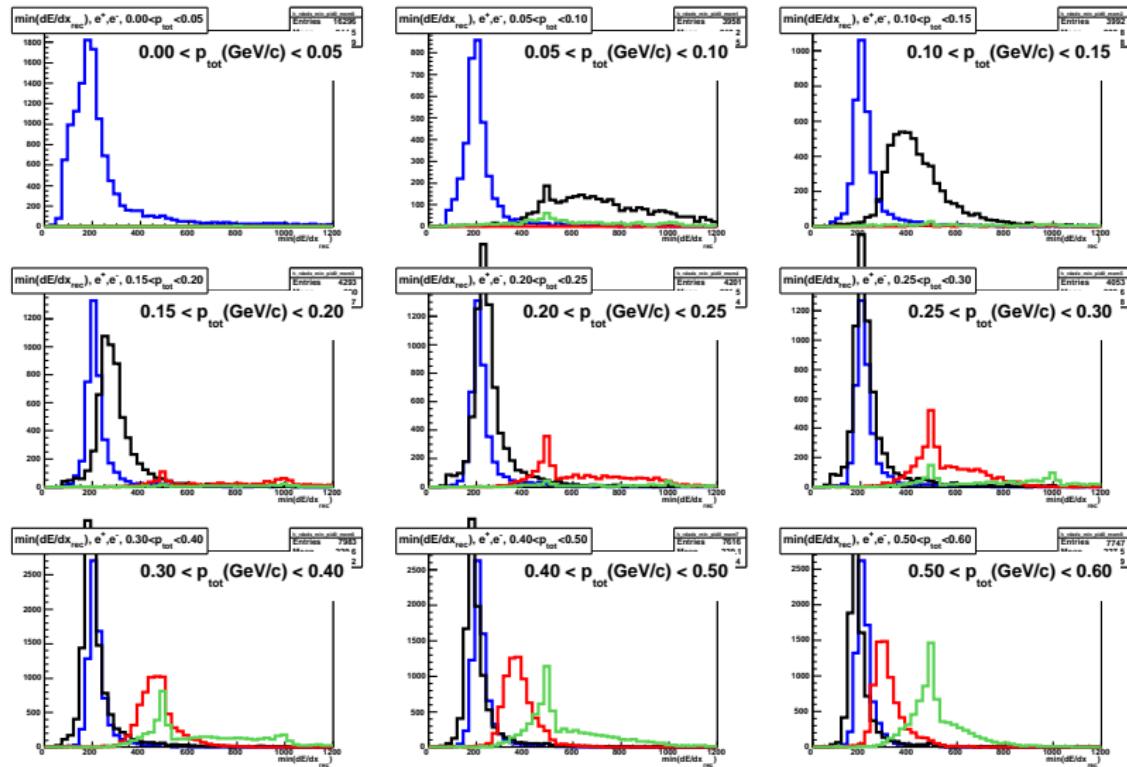
# Correlation between reconstructed and simulated $dE/dx$



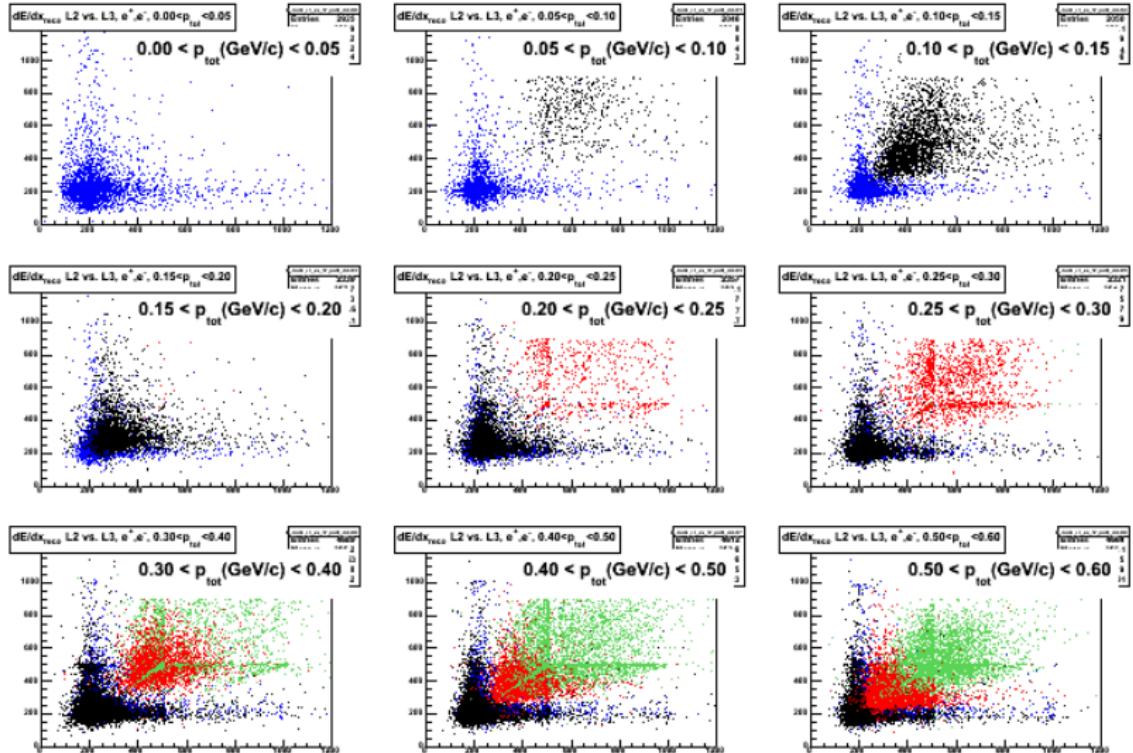
# Incidence angle corrected $\langle dE/dx_{reco} \rangle$ vs. $p_{tot}$



# Incidence angle corrected $\min(dE/dx_{reco})$ vs. $p_{tot}$



# $dE/dx_{reco}$ layer 2 vs. layer 3, $200 \text{ MeV} < p_{tot} < 500 \text{ MeV}$



## Conclusion

The reconstructed  $dE/dx$  from clusters (ADC sum X+U layer) is well correlated with the simulated  $dE/dx$

There is some improvement in using average or minimum of  $dE/dx$  measurements among available sample.

Simultaneous use of two independent measurements can even give better identification by overcoming overlap in the Landau tail.

Next steps:

- ▶ Use reconstructed instead of generated momenta.
- ▶ Add multiple scattering angle information.
- ▶ Try to reconstruct  $D_0 \rightarrow K\pi$  with charged  $\pi$  in the EMCAL and identified K in the SVX.

# backup: Tracking bug 1

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